

CLAIMS

WHAT IS CLAIMED IS:

1 1. A network system for facilitating access to functionality available on
2 one or more networks, comprising:

3 one or more terminals operable in a network;
4 a network infrastructure comprising one or more network systems;
5 at least one network-enabled application operating within a service
6 provision infrastructure for use by one or more of the terminals; and

7 at least one network service broker comprising a loosely-coupled
8 interface exposed to the service provision infrastructure for brokering added-value
9 network services from one or more of the terminals and network systems to the
10 service provision infrastructure.

1 2. The network system as in Claim 1, wherein the loosely-coupled
2 interface is a loosely-coupled standardized interface.

1 3. The network system as in Claim 2, wherein the loosely-coupled
2 standardized interface is defined in Extensible Markup Language (XML).

1 4. The network system as in Claim 1, wherein the loosely-coupled
2 interface comprises a Web Services interface.

1 5. The network system as in Claim 1, wherein the loosely-coupled
2 interface comprises a single loosely-coupled Web Service interface exposed to the
3 service provision infrastructure.

1 6. The network system as in Claim 1, wherein the network service broker
2 comprises at least one network-coupled broker to communicate with one or more
3 network elements in the network infrastructure.

1 7. The network system as in Claim 1, wherein the network service broker
2 comprises at least one terminal-coupled broker to communicate with one or more
3 terminals.

1 8. The network system as in Claim 1, wherein the network service broker
2 comprises at least one hybrid network service broker to communicate with one or
3 more network elements in the network infrastructure and with one or more terminals.

1 9. The network system as in Claim 1, wherein the network service broker
2 is an authentication broker to access authentication services for use by the network-
3 enabled application.

1 10. The network system as in Claim 1, wherein the network service broker
2 is a charging broker to access a charging/billing service in connection with use of the
3 network-enabled application.

1 11. The network system as in Claim 1, wherein the network service broker
2 is a location broker to access a terminal location service to allow a location of the
3 terminal to be provided to the network-enabled application.

1 12. The network system as in Claim 1, wherein the network service broker
2 is a content ordering broker to store subscription information to a profile register and
3 to verify subscription intentions of an end-user of the terminal.

1 13. The network system as in Claim 1, wherein the network service broker
2 is a presence broker to access a presence service to allow user presence
3 information to be provided to the network-enabled application.

1 14. The network system as in Claim 1, wherein the network service broker
2 is a client provisioning broker to broker provisioning of mobile terminals.

1 15. The network system as in Claim 1, wherein the network service broker
2 is a notification broker to facilitate pushing content to the terminals.

1 16. The network system as in Claim 1, wherein the network service broker
2 is a privacy broker to access end-user privacy information and to control which
3 information other brokers will provide to the service provision infrastructure.

1 17. The network system as in Claim 16, wherein the privacy broker
2 controls which information other brokers will provide to the service provision
3 infrastructure based on parameters defined by an end-user of the terminal, wherein
4 the parameters may be provided by the end-user manually at a time in which the
5 end-user privacy information is required, or automatically where the parameters
6 were defined by the end-user in advance.

1 18. A method of providing network applications access to service
2 functionality available via one or more networks, comprising:
3 providing at least one network service broker logically between one or
4 more network infrastructures and a service provision infrastructure operating on top
5 of the network infrastructures;
6 exposing a loosely-coupled interface of the network service broker to
7 the service provision infrastructure; and
8 facilitating access by the network applications to value-added services
9 within the network infrastructures via the loosely-coupled network service broker
10 interface.

1 19. The method of Claim 18, wherein facilitating access via the loosely-
2 coupled network service broker interface comprises making the service available to
3 the applications via the loosely-coupled network service broker interface using any
4 of a plurality of service provision infrastructure technologies.

1 20. The method of Claim 18, further comprising communicating between
2 the network service broker and the network infrastructure regardless of

3 technological differences in one or more different network elements operating within
4 the network infrastructure.

1 21. The method of Claim 18, further comprising communicating between
2 the network service broker and the network infrastructure regardless of
3 technological differences in one or more network infrastructure network systems
4 having different access methods.

1 22. The method of Claim 18, wherein the one or more network
2 infrastructures collectively implement a plurality of different network technologies,
3 and wherein the network service broker accommodates technological variations
4 between the network technologies and service provision infrastructure technologies.

1 23. The method of Claim 18, wherein exposing a loosely-coupled interface
2 of the network service broker to the service provision infrastructure comprises
3 exposing a loosely-coupled Web Services interface to the service provision
4 infrastructure.

1 24. The method of Claim 18, further comprising defining the loosely-
2 coupled interface in Extensible Markup Language (XML).

1 25. The method of Claim 18, wherein providing at least one network
2 service broker comprises providing a plurality of network service brokers, and
3 wherein each of the plurality of network service brokers comprises a loosely-coupled
4 interface exposed to the service provision infrastructure for communication
5 therebetween.

1 26. The method of Claim 25, wherein at least some of the plurality of
2 network service brokers intercommunicate.

1 27. The method of Claim 18, wherein the network infrastructures comprise
2 at least one fixed network.

1 28. The method of Claim 18, wherein the network infrastructures comprise
2 at least one wireless network.

1 29. The method of Claim 18, further comprising utilizing the value-added
2 service by the applications as arranged by the network service broker.

1 30. A method of providing network applications access to service
2 functionality available via one or more networks, comprising:
3 providing at least one network service broker logically between one or
4 more terminals and a service provision infrastructure operating on top of a network
5 infrastructure;
6 exposing a loosely-coupled interface of the network service broker to
7 the service provision infrastructure; and
8 facilitating access by the network applications to value-added services
9 provided at least in part by the terminals via the loosely-coupled network service
10 broker interface.

1 31. The method as in Claim 30, further comprising communicating a
2 terminal type of one or more of the terminals to the network service broker, and
3 providing the terminal type to the service provision infrastructure via the loosely-
4 coupled interface of the network service broker.

1 32. The method as in Claim 30, further comprising configuring one or more
2 user terminals via cooperative communication between the user terminals and the
3 network service broker at the direction of the network application, wherein the
4 configuration is accomplished regardless of the protocol utilized by the user
5 terminals.

1 33. A method of providing network applications access to service
2 functionality available via one or more networks, comprising:
3 providing at least one hybrid network service broker logically between
4 one or more network infrastructures and a service provision infrastructure operating

on top of the network infrastructures, and between one or more terminals and the service provision infrastructure;

exposing a loosely-coupled interface of the hybrid network service broker to the service provision infrastructure; and

facilitating access by the network applications via the loosely-coupled hybrid network service broker interface to value-added services provided via one or both of the terminals and the network infrastructures.

34. A method of providing network applications that operate within a service provision infrastructure access to service functionality available via a visited network in which a user of a terminal has roamed, comprising:

providing a use authorization voucher to a visited network service broker associated with the visited network;

receiving, at the service provision infrastructure, an address of the visited network service broker from a home network service broker associated with a home network, wherein the home network service broker exposes a loosely-coupled interface to the service provision infrastructure to facilitate communication therebetween;

accessing the visited network service broker by the service provision infrastructure using the address of the visited network service broker; and

facilitating access by the service provision infrastructure to the service functionality available from the visited network via a loosely-coupled interface of the visited network service broker that is exposed to the service provision infrastructure.

35. The method as in Claim 34, wherein providing the use voucher to the visited network service broker comprises providing the use voucher to the service provision infrastructure via the loosely-coupled interface of the home network service broker, and in turn providing the use voucher to the visited network service broker via the loosely-coupled interface of the visited network service broker.

1 36. The method as in Claim 34, wherein providing the use voucher to the
2 visited network service broker comprises directly providing the use voucher from the
3 home network service broker to the visited network service broker.

1 37. The method as in Claim 34, wherein providing a use authorization
2 voucher to the visited network service broker comprises providing the use
3 authorization voucher to the visited network if a roaming agreement between the
4 home and visited networks authorizes providing the use authorization voucher to the
5 visited network.

1 38. A method of providing network applications that operate within a
2 service provision infrastructure access to service functionality available via a visited
3 network in which a user of a terminal has roamed, wherein a roaming agreement
4 has been established between the visited network and a home network of the user
5 of the terminal, the method comprising:

6 communicating between the service provision infrastructure and a
7 home network service broker associated with the home network via a loosely-
8 coupled interface of the home network service broker exposed to the service
9 provision infrastructure; and

10 communicating between the home network service broker and a
11 visited network service broker associated with the visited network, wherein the home
12 network service broker serves as a proxy in accessing the service functionality
13 available via the visited network.

1 39. A method of providing network applications that operate within a
2 service provision infrastructure access to service functionality available via a visited
3 network in which a user of a terminal has roamed, wherein a roaming agreement
4 has been established between the visited network and the service provision
5 infrastructure, the method comprising:

6 providing a visited network service broker logically between the visited
7 network and the service provision infrastructure operating on top of a network
8 infrastructure;

9 exposing a loosely-coupled interface of the visited network service
10 broker to the service provision infrastructure; and

11 facilitating access by the service provision infrastructure to the service
12 functionality available from the visited network via the loosely-coupled interface of
13 the visited network service broker.

1 40. A network service broker for facilitating access by a service provision
2 infrastructure to service functionality available via one or more networks, the network
3 service broker comprising:

4 an interface to access the service functionality from a network
5 infrastructure; and

6 a loosely-coupled interface exposed to the service provision
7 infrastructure, wherein the loosely-coupled interface comprises a Web Services-
8 based interface having Extensible Markup Language (XML) schemata built on top of
9 a Web Services platform to expose the service functionality available via the
10 network.